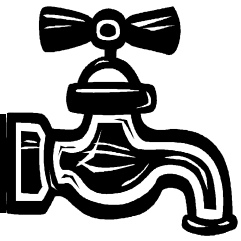
Supply Lines

A newsletter of the NHDES Water Supply Engineering Bureau (WSEB) Fall 2006
on the web at *www.des.nh.gov/wseb*



Emergency Planning
Floods, Pandemics, Boil Orders and Security Breaches

With the recent floods, fears of a flu pandemic, and the threat of vandalism or terrorist attack, if you haven't done so already it's a good time to go over your emergency plan. All community systems are required to have an emergency plan and to update it at least annually. Systems submitted these plans to DES in 2003 and will be required to do so again in 2009. Even though systems are not required to submit annual updates to DES, it is highly recommended that systems do because we do refer to the plans from time to time, especially during contamination events.

When you are reviewing your plan, make sure you have the correct phone numbers and test them to make sure they work. Notification procedures and communications with consumers are extremely important during an emergency. Also, it is imperative that your emergency plan identifies an alternate water source you would use if the quality of your normal source is compromised. It is beneficial to identify and coordinate with first responders in your area who will be called upon to assist you in the event of an emergency. This list will include local law enforcement departments, fire departments, health departments, local government agencies, hospitals and other health care providers, other utilities, state and federal agencies, and the media.

The Safe Drinking Water Trust by RCAP (Resources for Community and People) Solutions has created a document that water systems should consider in preparation for severe weather conditions. This can be found at www.watertrust.org/images/pics/ebul_storm_tips.pdf.

EPA has developed a quick Top 10 reference guide, which is summarized below, to help with pandemic and natural disaster planning.

1. Review and update your emergency plan including identification of critical functions and supplies that will need coverage. An example is operating with severe staff shortage. Contract operators that service many systems may want to consider how they would handle a shortage of staff.

2. Prepare yourself, family and home first. Have policies in place that allow workers to take care of families, but still provide adequate staffing.

3. Examine workforce alternatives through examining mutual aid agreements, contingency plans with contract operators, and cross training. Evaluate and test safe and secure use of automation, e.g., SCADA.

4. Collect utility information by creating and maintaining both on-site and off-site emergency kits, including extra sets of keys at multiple secure locations.

5. Conduct a "walk through" tour with your local emergency responders and alternate operators to familiarize them with the water system. Make sure all valves and equipment are clearly and accurately labeled.

Planning

Continued on page 8

INSIDE

How to Take a Bacteria Sample

A total coliform test is the basic yardstick for determining a water supply's biological quality. This test is performed frequently because of the risk that disease causing organisms pose to health. The test is easy to perform, inexpensive, and errs on the side of caution. To take a bacteria sample:

1. Take the sample from the sample site approved by DES.

2. Remove any attachments from the faucet (e.g., aerators, screens, hoses, water purification or filter devices). If this removal creates an uneven flow, install an extra collar without aerator inserts to provide an even flow. Once all devices are removed from the faucet, a lint free cloth dampened with bleach and water may be used to clean the faucet rim.

3. Turn the cold water on and allow it to run at a fast flow for 5 to 10 minutes.

4. Turn the water flow down to a steady stream.

5. Remove the cap from the sample bottle and hold it face down. Do not touch the rim of the bottle or the inside of the cap to avoid introducing bacteria into the sample.

-Do not put the bottle cap down on any surface.

-Do not allow water to splash from the sink into the bottle or cap.

-Do not rinse the bottle or cap.

6. Fill the bottle to the shoulder (at least 100 ml) leaving an air space at the top of the container. Do not let the bottle overflow.

7. Replace the cap onto the bottle, securing it tightly.

8. Turn off the water.

9. Using a waterproof pen or marker, write the exact sample location and the EPA # of the water system on a piece of masking tape and secure to the outside of the bottle.

10. Fill out the required bacteria sample submittal form completely.

-"Routine" means the sample is a required compliance sample.

-"Repeats" means the samples were requested due to a positive routine sample result.

11. Submit the bacteria sample and the sample result form to the state laboratory or a state certified laboratory for analysis.

- Sample must be processed within 30 hours of the time it is collected.

- Deliver sample to lab at 10 degrees C or less, but do not allow the sample to freeze.

If you have any questions about how to take a bacteria sample please contact Barbara Davis at (603) 271-2542 or bdavis@des.state.nh.us.

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Notifying the Public in an Emergency

In the event of an emergency, systems must notify customers quickly. Listed below are several options for notifying the public of an emergency.

• *Door-to-door personal notification*. This one-on-one contact may be a feasible option in smaller communities.

• *Deliver fliers door-to-door*. Fliers can be taped to a door or placed where the message is easily noticed. If you use the flier method, never place the notice in a mail box because residents may have already checked their mail and may not find out until the following day. Notices should be posted in public places normally frequented by residents, such as post offices, convenience stores, gas stations, etc.

• *Door hangers*. Closely aligned to fliers are door hangers, which can be an effective way to notify residents of a boil order. You can use the door hanger example (see hanger sidebar) as a guide to make your own copy or copy these notices ahead of time to have on hand, in case you ever have to use them. Give thought to how you will protect the notice if it is raining at the time of delivery.

Public Notification Door Hanger

A sample door hanger (with front and back) can soon be downloaded at www.des.nh.gov/wseb/publicnotice. Samples include "Boil Order", "Do Not Drink, and Do Not Use notices."

Once the problem has been corrected the advisory can be lifted. Advisory lifted door hangers are also available for download.

• *Notify critical customers and institutions* serving groups of people such as hospitals, nursing homes, day care centers, fire departments, schools, and other sensitive populations. In addition to leaving fliers or door hangers, making personal calls or contacts to these institutions is recommended.

• *You may consider holding a community meeting* depending, of course, on the circumstances of the contamination, and the size of the community.

• *It is extremely important to contact the media* with a prepared news release to notify the public. In a small community, however, TV and radio may not always be the fastest way to spread the word, depending on the time of day, the location of the stations and the water system, etc. Obviously in small communities with only a weekly newspaper or a non-local newspaper, notices may not be practical.

• *Include the public notice information on the greeting of your answering machine* or voicemail; use sound trucks as a supplement to hand delivery; and make use of internet e-mail and home pages if available.

• *Notices should match the consumer.* Notices for non-community systems should be appropriate to the consumers' situation. Visitors at a rest stop, for example, just need to be aware that they should not drink the water, rather than be told to boil it.

• *Send copies of notices to WSEB.* Remember to send a copy of each type of notice and a certification statement to the WSEB within ten days after issuing a notice.

• *Develop a phone tree.* Enlist volunteers to telephone customers. (see phone tree sidebar)

• *Notify the public when the boil order is lifted.* A boil order must remain in effect until permission to lift it is given by DES. The same methods used to notify the customers of the boil water advisory are used to notify the customer that the notice has ended (see door hanger inserts).

• *Remember, failure to notify the public* can result in an enforcement action with monetary penalties.

• *Always contact the DES office for advice and assistance* before issuing a boil order. Remember to notify DES of an emergency within 24 hours or sooner.

Setting Up a Phone Tree

• Select a lead person and a set of volunteers.

• Make a list with current telephone numbers (e-mail/cell) of all the people you would need to reach.

• Write a brief script of what to say.

• Have each volunteer phone one or more customers.

• Each volunteer should keep trying to reach each person on their list until they make contact.

• If you can not reach a person on the list, notify the lead person.

• Test the tree before you need it.

Notifying the Public of a Boil Water Advisory

It is the responsibility of a public water system to protect public health by providing safe drinking water. In the event that contamination is detected in drinking water, the system must notify customers quickly to protect them and to comply with the requirements of the Public Notification Rule.

When fecal coliform or E. coli bacteria are discovered in drinking water, a boil order is required. The system is required to notify the public as soon as possible, but no later than 24 hours after learning of the contamination. The boil order must instruct customers to boil their drinking water (or switch to bottled water) until further notice. As soon as you discover an emergency, you should contact DES to discuss the situation and to determine what your next step might be. If the decision is to notify the public, the notification method and urgency will depend on the severity of the public health threat.

Some basic steps will prepare you ahead of time in case of a boil order emergency. This should be included in your system's emergency plan. Here are some general suggestions for preparing such a plan ahead of time:

1. Decide who is in charge. Designate a first and second person in charge in case one or the other is out of town or unable to handle the emergency.

2. Make a list of reasons requiring a boil water advisory. These are the major reasons for issuing a boil order: the presence of fecal or E. coli bacteria, a waterborne disease outbreak, certain turbidity violations, the failure of a key water treatment process, and the loss of water pressure. The presence of fecal or E. coli bacteria is by far the most frequent cause of a boil order. A boil order template for use in fecal or E. coli bacteria situations is available at www.des.nh.gov/wseb/publicnotice. This template can be modified for use in other situations.

3. Develop a clear set of procedures. Decide which actions to take in an emergency situation, and then write down the procedures and use them as your guidelines. Without a plan of action, conflicting directives and public notices can lead to confusion and frustration on the part of your customers, and endanger their health.

4. Determine temporary alternate water sources. Decide ahead of time how you will provide alternative safe drinking water in an emergency if the situation warrants it. Your choices may be to use bottled water or bulk water provided by certified water haulers. For a list of water haulers in NH, please visit www.des.nh.gov/factsheets/ws/ws-18-2.htm.

5. Be prepared to answer questions from consumers. The issuance of a boil order is very likely to prompt questions from your customers. To help you answer these questions, DES has developed two fact sheets:

- Frequently Asked Questions About Boil Orders: www.des.nh.gov/factsheets/ws/ws-4-12.htm.
- Boil Water Advisories: www.des.nh.gov/factsheets/ws/ws-4-8.htm.

For more information on boil orders/advisories please contact Barbara Davis at (603) 271-2542 or bdavis@des.state.nh.us.

Small Water Systems
Are you Sending Money Down the Drain?

How healthy is your small community water system? Is the water system's pressure up to par? Does the water system lose large amounts of its water through uncontrolled, unaccounted for, or undetermined leakage? Are your wells running out of water? If so, below is a record of what was done at a small water system that was having leakage problems.

Recently a customer from a small water system made a complaint to DES about some existing leaks in the water system's distribution system. The water system had previously told its customers it was not going to try to repair the leaks. DES in turn contacted the water system about their decision to forgo repairs at this time. DES explained the potential contamination problems from backsiphonage, if water pressure were to drop sufficiently; potential loss of revenue or product; and maintaining compliance with the new water conservation requirements (see sidebar). The water system offered that the leaks were not cost-effective to repair at this time and their small size made them difficult to locate without extensive excavation.

The water system decided to contact Granite State Rural Water Association (GSRWA) for assistance. GSRWA came out to the system with their listening equipment. The area of the water distribution system in question was isolated by the selected closing of shut-off valves. The location of the water distribution pipes, customer services, valves, and shut-offs were marked as they were determined. Eventually the area for the leak was narrowed down to a possible area about ten feet in diameter. Excavation of this size was thought to be a cost-effective endeavor.

Arrangements were made to hire a consultant and excavation company. The digging commenced and the trench proceeded. After a few hours of difficult but determined digging, the leak was located. A few hours later the repairs had been completed and the road was back to its normal condition.

So, if your system has a leak, you should try to follow these important tips:

- Leaks in the water distribution system should be addressed as they become known.
- Small leaks sometimes have the habit of becoming big leaks at the most inopportune time.
- A small leak repaired today saves water and money. A large leak tomorrow can drain the water system, create a backsiphonage condition, or run the source(s) dry.
- Using modern listening equipment to locate leaks is a better method than simply waiting for the leaks to "come to the surface." Digging up hundreds of feet of water distribution piping is also usually not a cost-effective methodology and it also adds to the risk of damaging the water pipe (and maybe creating a larger leak) during the excavation process.
- Another valuable piece of leak detection equipment is SCADA (Supervisory Control and Data Acquisition) equipment. Without this equipment a water system would not be aware of the existence of a leak. SCADA is something all water system owners should consider when contemplating upgrades.

For more information on DES's capacity development program please contact Cindy Klevens at (603) 271-3108 or cklevens@des.state.nh.us.

Water Conservation

This past spring, DES adopted water conservation rules (Env-Ws 390) for community type public water systems. New water systems and those existing water systems developing new sources will need to be in compliance with these new water conservation rules. Essentially the rules will require the installation of water meters for each customer service and each water supply source. These meters must be read at least every 90 and 30 days respectively.

In addition, the water system will need to submit a response plan to NHDES, if the unaccounted for water in the water system exceeds 15 percent of the total water introduced. These new requirements should give water systems reason to pay attention to leakage and to make the needed repairs to the water system at the earliest opportunity.

For more information on the water conservation program please contact Diana Morgan at 603-271-2947 or dmorgan@des.state.nh.us.

Costs for Disinfection Byproduct Rule

The WSEB has had several inquiries from larger residential water systems regarding whether costs for implementing the newly-adopted Stage 2 Disinfection Byproduct Rule should be included in 2007 budgets.

The Disinfection Byproduct Rule applies primarily to community systems using chlorine. Under the Stage 1 rule, larger systems currently calculate average sample results for total trihalomethanes (TTHM) and haloacetic acids (HAA5) over four calendar quarters and over all of the system's sampling locations. Under the Stage 2 rule, water systems will continue to average sample results over time, but will be required to calculate this average for *each* specific sampling location. Sampling points for Stage 2 monitoring will be determined through an initial distribution system evaluation (IDSE). Systems have four options to meet the IDSE requirement:

- Obtain a very small system waiver (for systems serving fewer than 500).
- Meet 40/30 certification requirements (for systems with less than 40 mg/l and 30 mg/l TTHM and HAA5, respectively, over an 8-quarter period).
- Conduct a system specific study using a hydraulic model or existing monitoring results.
- Conduct standard monitoring.

From the above, many systems will not be required to complete an IDSE due to size or low TTHM and HAA5 results under Stage 1. For those systems still required to complete an IDSE, the last of these is the option most likely to be used. The number and timing of IDSE samples to be taken depends primarily on the system population and source type (surface water or groundwater). Although monitoring plans would be prepared as early as 2007, actual sampling and lab analysis for the IDSE will not begin until January 2008 at the earliest, except for systems we have already contacted individually.

Note that compliance monitoring for Stage 2 begins in 2012 (for systems serving more than 10,000) or 2013. Training sessions for IDSE and other Stage 2 matters will be conducted in 2007. For further information please contact Cindy Klevens at (603) 271-3108 or Bob Mann at (603) 271-2953 or Rick Skarinka at (603) 271-2948.

Another Opportunity for Water Security Grants

The deadline for the security installation grant applications was September 1. DES received 11 applications for a total request of $73,000. That's good news for those community systems that did not get a chance to apply because we will be having another grant round with the remaining funds and it will be open to all community systems regardless of size. Applications are due December 31. This was a pilot program with the US Environmental Protection Agency to provide funds to install security measures. Through this project, New Hampshire businesses are collaborating with DES to offer security equipment, products and resources at or below cost to water systems. Systems can receive up to $4,500 to install security measures. You can check out the program website and a list of businesses offering discounts and download an application at www.des.nh.gov/wseb/buws or contact Johnna McKenna at (603) 271-7017 or jmckenna@des.state.nh.us.

Operator and Owner News

Notify WSEB of System Changes

These last few years have been a hectic time for public water systems. Changing regulations and system expansion are keeping everyone busy. Lately, this has resulted in a few instances of systems not notifying DES of some system changes. It is imperative that you remember to get DES approval prior to adding or removing treatment, changing chemicals, or expanding your system. It is also important that you notify DES when there is a change of system managers, operators, association presidents, etc., so the correct people receive information necessary to keep the water system in compliance.

Changing or adding new treatment or changing the distribution system can affect your system in unforeseen ways. The most publicized example of this was the recent lead problems in Washington, D.C. They changed their disinfection process to address disinfection byproduct concerns. This change counteracted their corrosion control resulting in thousands of people being exposed to elevated lead levels. Closer to home, a New Hampshire water system recently modified its distribution system and unexpectedly changed the hydraulic grade line, dramatically reducing pressure to a large section of the system.

These are just a couple of examples why systems are required to submit all changes to DES for review and approval. DES engineers provide an independent review, protecting you and your system, helping to ensure that things will be done properly and that there are no unintended consequences. If you have any questions concerning whether or not what you are doing needs DES approval please contact DES at (603) 271-2513.

Operational Responsibilities

This is a reminder to all water system owners and operators. The primary operator is responsible for ALL operational aspects of the public water system. There have been incidences lately of primary operators having little or no knowledge of issues, problems, repairs, or changes at water systems or of operators disavowing responsibility for a part of the system (e.g., distribution system, maintenance, or repair). This should not and can not happen. Even if another certified operator is performing the duties or signing off on the actions, the primary operator is still the responsible party and it is the owner's responsibility to assure that this is the case. The responsibilities for a water system's owner and primary operator are spelled out in Env-Ws 367.14 and 15. The primary operator is responsible for all operational aspects of the water system and the system owner is responsible to ensure the primary operator is performing these duties.

If you have any questions or concerns about this, please contact Chip Mackey at (603) 271-2410 or hmackey@des.state.nh.us.

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Planning

Continued from page 1

6. Have a communications strategy, which includes ways to communicate updates with the state and customers. Develop standard language for various public notices.

7. Stock supplies and chemicals safely and securely.

8. Exercise generators under load. Have a plan in place for receiving fuel in an emergency.

9. Prepare for employees remaining at work for extended periods (sleeping arrangements, food, water, medical supplies, etc.).

10. Practice your emergency response plan.

During an emergency, it is possible, especially at smaller systems, that sampling and other system functions will need to be conducted by inexperienced staff. For that reason, we present a review of the basics on page 2.

Attention Writers

We need your help! Do you have any suggestions on topics for Supply Lines? How can we improve the newsletter? Do you have a water supply article for the newsletter? We want to hear from you.

Please contact Jessica Morton at (603) 271-4071 or jmorton@des.state.nh.us for more information.